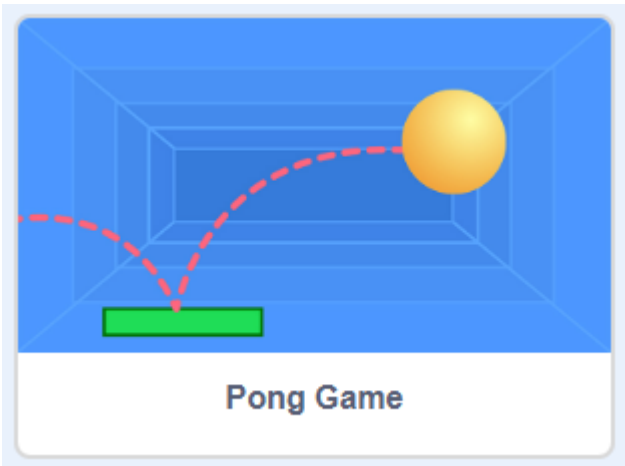


## Pong Game - Activity Overview

Your challenge is to create a "pong" type game.



The original Pong game featured a paddle that was used to deflect a ball that bounced around and deflected off the edges of the playing area.

Points were scored every time you moved the paddle into position and deflected the ball.

The first part of the challenge is to use the provided Scratch tutorial to build a basic Pong type game and then to test the code to see how the game works.

The second part of the challenge is to alter the code to test the effects of those changes on how the game works.

The third and fourth parts of the challenge are to alter and add to the code to increase the difficulty of play in the game to make the game level-up two times.

# Pong Game - Getting Started

Open Scratch and click on Tutorials.

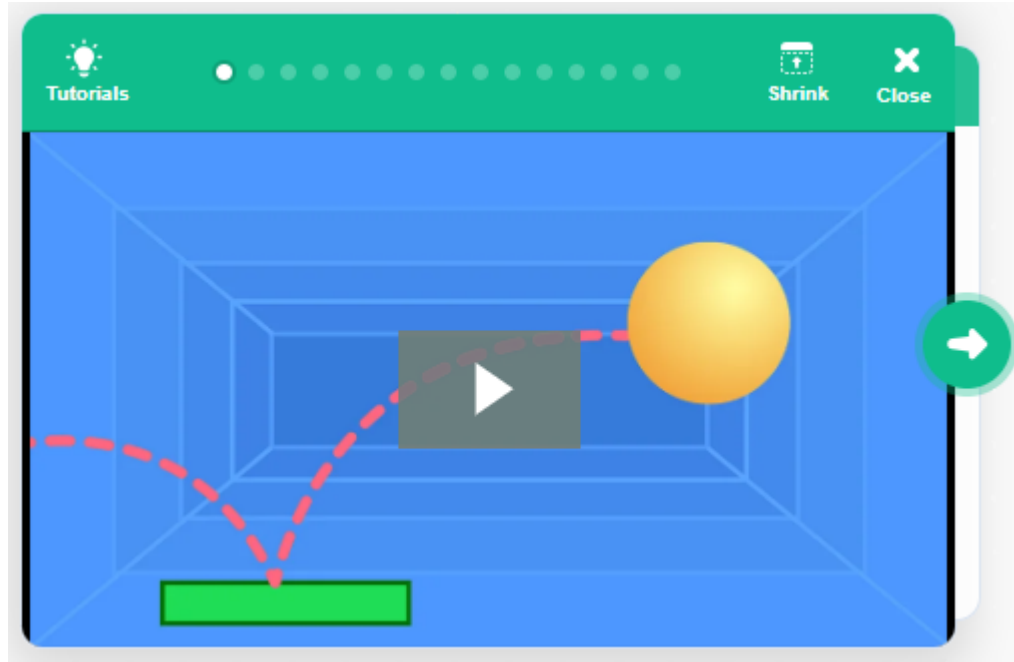


Choose the tutorial titled Pong Game.

The image shows the 'Choose a Tutorial' page in Scratch. At the top, there is a 'Back' button and the text 'Choose a Tutorial'. Below this is a search bar and a row of category buttons: 'All', 'Animation', 'Art', 'Music', 'Games', and 'Stories'. The 'Games' button is selected. The main area displays a grid of tutorial cards. The first row includes 'Add Effects', 'Make it Fly', 'Make Music', 'Video Sensing', and 'Talking Tales'. The second row, titled 'Prompts', includes 'Animate a Name', 'Animate A Character', 'Create A Story', 'Create Animations That Talk', and 'Imagine a World'. The third row includes 'Pong Game', 'Make a Clicker Game', 'Make a Chase Game', 'Code a Cartoon', and 'Animate an Adventure Game'. The 'Pong Game' card, which shows a ball and paddles in a blue arena, is highlighted with a red rectangular border.

## Pong Game - Part One

The first challenge for your Pong Game is that you complete the full tutorial exactly as shown to create the basic action and scoring for your Pong Game.



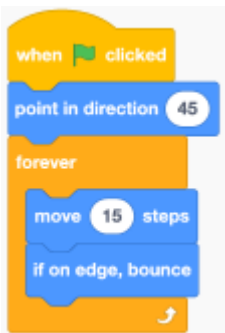
**Do not** spend time working with the paint tools to create or modify the existing backdrops, characters, or objects.

Show Mr. Desmond what you have done when you have completed the tutorial.

## Pong Game - Part Two

Your challenge is to alter the code to test the effects of those changes on how the game works.

You will alter the code by changing the angle of movement for the ball.



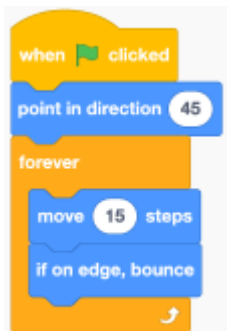
The original code set the ball angle using the point in direction block.

Working in increments of 15 try different angles from 15 to 90.

Make note of how different angles affect how the game works.

Set the angle back to 45.

You will next alter the code by changing the speed of movement for the ball.



The original code set the ball speed using the move steps block.

Working in increments of 5 try different speeds from 5 to 45.

Make note of how different speeds affect how the game works.

Set the speed back to 15.

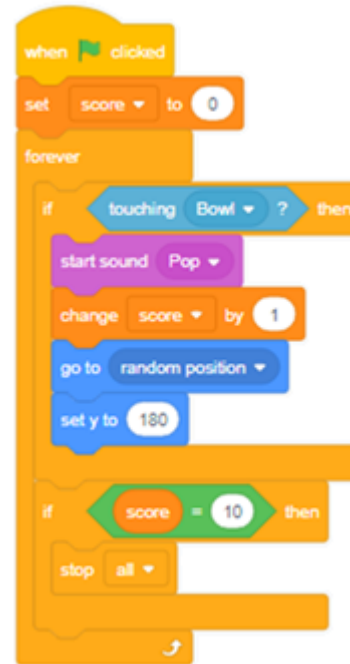
Show Mr. Desmond what you have done.

## Pong Game - Part Three

Your challenge is to level-up the Pong Game to make it more difficult to play.

The first part of that idea will require you devise a way to change the level of play after gaining a certain number of points. To do so you will have to make changes to your code for keeping score.

What is a reasonable number of points to move your Pong Game to level two?

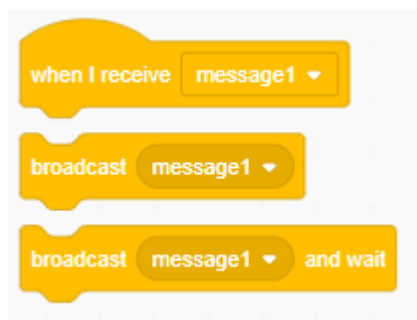


This is an example of a code sequence to gain points. It is not the code you need. You have to do the coding yourself.

You used this code in the Apple Catch Game you created.

The **if score =** idea shown here will be very useful in your game.

Instead of stopping the game at the end of level one, as shown in the example

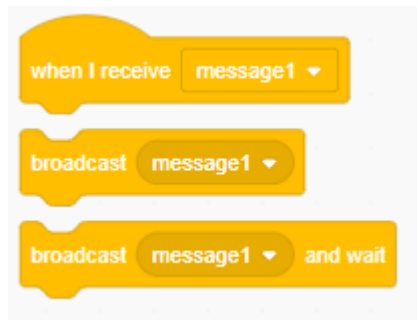


above, send a message using the broadcast block. You will set the broadcast message. Keep it short and simple.

Use the when I receive broadcast block to start new code sequences for level two.

## Pong Game - Part Three

The code sequences for level one will happen when the green flag is clicked. 🚩



The code sequences for level two will happen when the broadcast sent in level one has been received.

For level two make the game more difficult to play by varying the angle of movement and speed of movement of the ball.

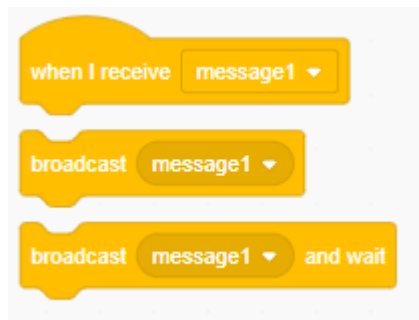
You will need to think about what to do and figure out how to make the level two part of your Pong Game work. Other people will not do the coding for you, including your teachers.

Show Mr. Desmond what you have done when you have completed the level two part of your pong game.

## Pong Game - Part Four

Your challenge is to level-up the Pong Game to level three to make it more even more difficult to play.

Think about what you will need to do to change the level of play from level two to level three. Will the level change after gaining a certain number of points in level two? Will you have to make changes to your code in level two for keeping score? What would be a reasonable number of points to move your game to level three?



Will you need to send another message using the broadcast block?

Will you need to use the when I receive broadcast block to start new code sequences for level three?

For level three make the game more difficult to play by adding an extra ball or an object that is to be avoided. How will these extras affect game play?

## Pong Game - Part Four

Perhaps the second ball is smaller and you gain more points by deflecting it or perhaps the object to be avoided makes you lose points.

You will need to think about what to do and figure out how to make the level three part of your game work. Other people will not do the coding for you, including your teachers.

You do **not** need to spend time working with the paint tools to create or modify the existing backdrops, characters, or objects. If you truly do need to use the paint tools keep your efforts simple and purposeful. Do not spend long periods of time being a graphic artist. There is much to do to make your Pong Game.

Show Mr. Desmond what you have done when you have completed the level three part of your pong game.

## Pong Game - Part Five

Your challenge is to make a new game based on the Pong Game you created. How could you modify the game to be a different game based on the same concepts?

What would that look like? How would that be played?

Open Scratch and look at the various backdrops (backgrounds) that are available to use. Consider how you could use some of these backdrops for different parts of your game. Next look at the various sprites (characters and objects) that are available to use. Consider how you could use some of these characters and objects for your game.

Share your ideas for your new game with Mr. Desmond.

You need approval to continue.

Show Mr. Desmond what you have done when you have completed your new game.